PART 1 - GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM C 665	(1998) Mineral- Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing
ASTM D 3833M	(1996) Water Vapor Transmission of Pressure-Sensitive Tapes (Metric)
ASTM D 3833	(1996) Water Vapor Transmission of Pressure-Sensitive Tapes
ASTM D 4397	(1996) Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications
ASTM E 84	(1998) Surface Burning Characteristics of Building Materials
ASTM E 96	(1995) Water Vapor Transmission of Materials
ASTM E 136	(1996; Rev. A) Behavior of Materials in a Vertical Tube Furnace at 750 Degrees C

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.134	Respiratory Protection

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 54	(1996) National Fuel Gas Code
NFPA 70	(1999) National Electrical Code
NFPA 211	(1996) Chimneys, Fireplaces, Vents, and Solid Fuel Burning Appliances

1.2 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures."

1.2.1 SD-03, Product Data

a. Blanket insulation

b. Vapor retarder

c. Pressure sensitive tape

d. Accessories

1.3 DELIVERY, STORAGE, AND HANDLING

1.3.1 Delivery

Deliver materials to site in original sealed wrapping bearing manufacturer's name and brand designation, specification number, type, grade, R- value, and class. Store and handle to protect from damage. Do not allow insulation Materials to become wet, soiled, crushed, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storing, and protecting of materials before and during installation.

1.3.2 Storage

Inspect materials delivered to the site for damage; unload and store out of weather in manufacturer's original packaging. Store only in dry locations, not subject to open flames or sparks, and easily accessible for inspection and handling.

1.4 SAFETY PRECAUTIONS

1.4.1 Respirators

Provide installers with dust/ mist respirators, training in their use, and protective clothing, all approved by National Institute for Occupational Safety and Health (NIOSH)/ Mine Safety and Health Administration (MSHA) in accordance with 29 CFR 1910.134.

1.4.2 Smoking

Do not smoke during installation of blanket thermal insulation.

1.4.3 Other Safety Concerns

Consider other safety concerns and measures as outlined in ASTM C 930.

PART 2 - PRODUCTS

2.1 BLANKET INSULATION

ASTM C 665, Type Class A, membrane- faced surface with a flame spread of 25 or less and a smoke developed rating of 150 or less when tested in accordance with ASTM E 84.

2.1.1 Thermal Resistance Value (R- VALUE)

a. Walls R-19

b. Roof R-30

2.1.2 Recycled Materials

Provide Thermal Insulation containing recycled materials to the extent practicable, provided the material

meets all other requirements of this section. The minimum required recycled materials content by weight are:

Rock Wool: 75 percent slag
Fiberglass: 20 to 25 percent glass cullet

2.1.3 Sound Insulation

Semi-rigid spun mineral fiber batt; ASTM C 665, Type 1.

2.1.4 Prohibited Materials

Do not provide asbestos-containing materials.

2.2 SILL SEALER

Dow Sill Seal, Ethafoam brand polyethylene foam, size ¼" X 5 ½ ", or equal.

2.3 BLOCKING

Wood, metal, unfaced mineral fiber blankets in accordance with ASTM C 665, Type I, or other approved materials. Use only non- combustible materials meeting the requirements of ASTM E 136 for blocking around heat producing devices.

2.4 VAPOR RETARDER

a. 6 mil thick polyethylene sheeting conforming to ASTM D 4397 and having a water vapor permeance of 5.72 x 10- 8g/ Pa. s. m2 1 perm or less when tested in accordance with ASTM E 96.

2.5 PRESSURE SENSITIVE TAPE

As recommended by the vapor retarder manufacturer and having a water vapor permeance rating of 5.72 x 10- 8 g/ Pa. s. m2 one perm or less when tested in accordance with ASTM D 3833M ASTM D 3833.

2.6 ACCESSORIES

2.6.1 Adhesive

As recommended by the insulation manufacturer.

2.6.2 Mechanical Fasteners

Corrosion resistant fasteners as recommended by the insulation manufacturer.

2.6.3 Wire Mesh

Corrosion resistant and as recommended by the insulation manufacturer.

PART 3 - EXECUTION

3.1 EXISTING CONDITIONS

Before installing insulation, ensure that areas that will be in contact with the insulation are dry and free of projections which could cause voids, compressed insulation, or punctured vapor retarders. If moisture or other conditions are found that do not allow the workmanlike installation of the insulation, do not proceed but notify Contracting Officer of such conditions.

3.2 PREPARATION

3.2.1 Blocking at Access Doors

Install permanent blocking around access doors. Install permanent blocking to maintain accessibility to equipment or controls that require maintenance or adjustment.

3.2.2 Blocking Around Heat Producing Devices

Install non- combustible blocking around heat producing devices to provide the following clearances:

a. Recessed lighting fixtures, including wiring compartments, ballasts, and other heat producing devices, unless these are certified by the manufacturer for installation surrounded by insulation: 3 inches from outside face of fixtures and devices or as required by NFPA 70 and, if insulation is to be placed above fixture or device, 24 inches above fixture.

b. Gas Fired Appliances: Clearances as required in NFPA 54.

Blocking around flues and chimneys is not required when insulation blanket, including any attached vapor retarder, passed ASTM E 136, in addition to meeting all other requirements stipulated in Part 2. Blocking is also not required if the chimneys are certified by the manufacturer for use in contact with insulating materials.

3.3 INSTALLATION

3.3.1 Insulation

Install and handle insulation in accordance with manufacturer's instructions. Keep material dry and free of extraneous materials. Ensure personal protective clothing and respiratory equipment is used as required. Observe safe work practices.

3.3.1.1 Electrical wiring

Do not install insulation in a manner that would sandwich electrical wiring between two layers of insulation.

3.3.1.2 Continuity of Insulation

Install blanket insulation to butt tightly against adjoining blankets and to studs, rafters, joists, sill plates, headers and any obstructions. Provide continuity and integrity of insulation at corners, wall to ceiling joints, roof, and floor. Avoid creating thermal bridges.

3.3.1.3 Installation at Bridging and Cross Bracing

Insulate at bridging and cross bracing by splitting blanket vertically at center and packing one half into each opening. Butt insulation at bridging and cross bracing; fill in bridged area with loose or scrap insulation.

3.3.1.4 Cold Climate Requirement

Place insulation to the outside of pipes.

3.3.1.5 Insulation Blanket with Affixed Vapor Retarder

Locate vapor retarder as indicated. Do not install blankets with affixed vapor retarders unless so specified. Avoid gaps and bulges in insulation and "fishmouth" in vapor retarders. Overlap both flanges when using face method. Seal joints and edges of vapor retarder with pressure sensitive tape. Cover these any insulated cracks with vapor retarder material and tape all joints with pressure sensitive tape to provide air and vapor tightness.

3.3.1.6 Sizing of Blankets

Size the width of blankets for a snug fit.

END OF SECTION